SIMPLE SHARPENING PROCEDURE

Use the Unsharp Mask This is a wonderful tool but it is necessary to understand its limitations.

It works by highlighting edges with a thin line of contrasting brightness. **It has not made the picture sharper, it only appears sharper.** There is another benefit from applying an unsharp mask. It adds a sparkling quality to the image which is often very pleasant.

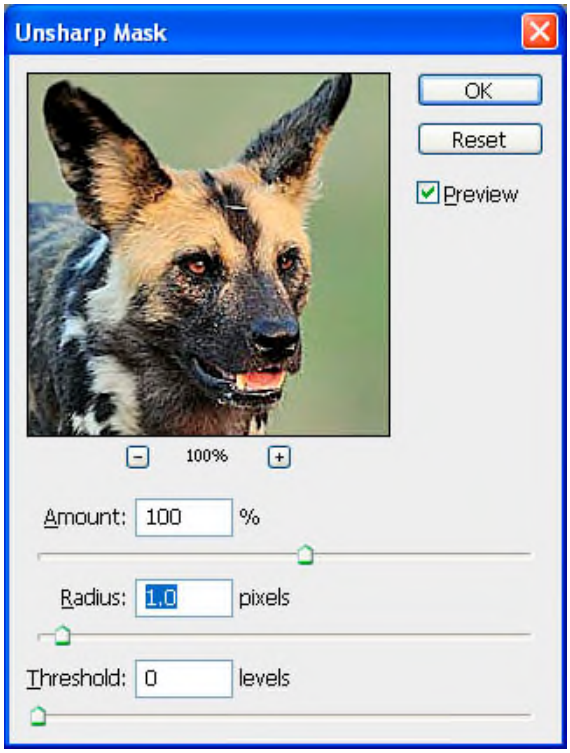
However, it is all too easy to over-sharpen digital images. This can add grainy texture to smoothly uniform tones like sky or skin and bright unsightly halos can appear along dark edges. Caution is indicated. Inspect your image carefully at 100% magnification. If these artefacts appear, reduce the settings in the Unsharp Mask dialogue box.

Whatever sharpening technique being used, including the Unsharp Mask, the amount of sharpening that can be applied without creating visible artefacts, depends on the resolution of the image.

High resolution images, suitable for printing, require and accept a great deal more sharpening than low resolution images such as those being prepared for projection or viewing on a TV screen. The two sets of settings recommended below are suitable for high resolution images larger than 3000 pixels wide X 2000 pixels high, and low resolution images typically less than 1200 pixels wide X 800 pixels high. The latter includes images sized to suit small projectors that display images with a size or 1024X768 pixels and most TV screens.

NB Unsharp masking must be the last step in processing your image, immediately before printing or projecting. It is a wholly artificial process and the artefacts added will be emphasised if you subsequently process the image further.

Unsharp mask settings (High resolution)



Amount This controls the intensity of the effect. Up to 100% is usually sufficient. More than 100% may produce unacceptable artefacts along the edges.

Radius This sets the width of each tiny highlight along each edge. 1 to 1.5 pixels is usually enough. More can produce edges that appear encrusted with grit. Bright halos may appear along dark edges, particularly when outlined against the sky.

Threshold This defines the brightness or colour differences required before an edge is detected and sharpened. The best setting is often 0. Increasing the threshold setting appears to cancel out the radius setting but the effect of increasing the threshold setting is subtly different from reducing the radius setting.

The settings specified above are suitable for images that are being prepared for printing – they hold a large number of pixels, typically more than 3000 pixels wide and or 2000 pixels high.

Images intended for projection have far fewer pixels and they are enlarged significantly when projected. Thus bight halos along edges become visible and very unsightly.

Unsharp Mask Settings for Projected Images

To prevent the formation of unsightly halos the following settings are recommended:

Radius: 0.4 pixels – **Never** more

Amount: 100% to 250% but inspect the image for halos

Threshold: 0

Do not use these settings blindly. Inspect the result carefully. Whilst sharpening usually improves the visual impact of an image it can cause a loss of colour saturation, particularly in images with a lot of very fine colour detail such as autumnal coloured leaf detail. If any negative effects appear, reduce the **Amount** setting. Your judgement when inspecting the preview shown in the Unsharp Mask dialogue box at 100% magnification is by far the best means of determining when too much sharpening has been applied.

Note: Sharpening techniques do not sharpen out of focus images. If an image is out of focus it has no edges for the sharpening filter to work on.